

AMENDMENTS TO THE DRAWINGS:

Please find accompanying this response replacement sheets for Figs. 1, 4, 5A and 5B, wherein amendments explained in the Remarks presented below are effected.

REMARKS

Claims 5-24 are now pending in this application. Claims 5/7, 6/7, 7 and 8 are rejected. Claims 5/8, 6/8, 9 and 10 are objected to. Claims 1-4 are previously cancelled. New claims 11-24 are added. Claims 7 and 8 are amended herein to clarify the invention and to address matters of form unrelated to substantive patentability issues. Formal matters are attended in the re-presentation of claim 5/8 and 6/8 as claims 11 and 12, and the amendment of claim 9 that were not addressed by the Examiner and accordingly are considered unrelated to substantive patentability issues. For the convenience of the Examiner, APPENDIX I is provided herewith having a complete set of pending claims with all amendments effected therein. The specification is amended to address idiomatic and obvious errors. No new matter is added.

DRAWING OBJECTIONS

The drawings are objected to. The Office Action states that the legend "Prior Art" is required on Figs. 4, 5A and 5B to clarify the invention. Proposed replacement sheets of Figs. 4, 5A and 5B wherein legends "PRIOR ART" are added are appended hereto.

The Examiner objects to the drawings under 37 C.F.R. § 1.83(a) for failing to show every feature of the invention specified in the claims. It is stated that the

drawings do not show the “side plates” according to claim 8. Please find accompanying this amendment a replacement sheet for Fig. 1 wherein the drawing is amended to include a reference designator 60 with lead lines directed to “sides.” The forwardmost side is added and shown in broken way fashion while the rearmost side is identified as the back wall of the chambers. The specification is amended on page 11, wherein the sides were previously referenced by text, to relate the text to Fig. 1. No new matter is added since the features of the new drawings are clearly supported by the specification and the above noted claims. In view of this addition, reconsideration of the objection to the drawings and withdrawal thereof are earnestly solicited.

CLAIM REJECTIONS UNDER § 112, SECOND PARAGRAPH

Claims 5-8 are rejected as indefinite under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter of the invention. The Office Action appears to indicate that the phraseology “by means of” used in the claims was somehow intended to invoke 35 U.S.C. §112, sixth paragraph and that recitation of function is questioned. Applicants submits that a proper reading of the claim will reveal that the assumption of the Office Action is misplaced. It is understood that not every use of the word “means” invokes the sixth paragraph and that the accepted phraseology

“by means of” is clearly one of such uses. The cited case of *Ex parte Klumb*, 159 USPQ 694 (B.P.A.I. 1967) is inapplicable as evidenced by the wording of the rejection in the Office Action. The Office Action avers that the word “means” is “preceded” by the noted words, e.g., “of an operating fluid.” This is clearly not the case since these words *follow* the word “means.” Thus, the stated rejection does not correspond to the claim language. Nevertheless, in the interest of forwarding prosecution, applicant has removed questioned use of the word “means” without making any substantive alteration to the claim meaning.

ALLOWABLE SUBJECT MATTER

The Office Action further indicates that claims 5/8, 6/8, 9 and 10 contain allowable subject matter and would be allowed if amended to overcome the §112, second paragraph rejection. Claims 5/8 and 6/8 are now respectively presented as claim 11 and 12 and include all subject matter of claim 5/8 and 6/8. Claim 9 is amended to stand in independent form. Each of these independent claims differs from original claim language with regard matters of form and not substance. No amendments are made which substantively alter the scope of the claims. It is respectfully submitted that the amendments remove or correct the informalities noted in the Office Action. Therefore, and in light of the Office Action statement

indicating the allowable subject matter, reconsideration of the rejection of claims 9 and 10, and allowance of claim 9-12 are earnestly requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102(b)

Claims 5 and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by King or the Miller references. Applicant herein respectfully traverses these rejections. “Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). It is respectfully submitted that the cited reference is deficient with regard to the following.

The present claims 7 and 8 require that the discharge pressure (Pd) be greater than the maximum volume pressure (Pc) and:

the expander having a intake port communicating with the chamber introducing the high-pressure operating fluid into the chamber prior to the chamber expanding to the maximum volume, said intake port being positioned to be out of communication with the operating chamber to end intake of the high pressure operating fluid immediately prior to another operating chamber of said operating chambers, immediately preceding the operating chamber in expansion cycling, reaching the maximum volume.

In the expander of the presently claimed invention, the positioning of the intake is aligned based on the positioning of the rotor chambers when a chamber is at maximum volume. This allows the expansion of the fluid to achieve overexpansion, i.e., $P_c < P_d$, as related in the specification at page 13, lines 8-15, and page 14, lines 7-16.

Neither the King nor the Miller reference teach this configuration. The device in Fig. 2 of the King reference has an intake which ranges from 0 to (180-180/n) as does the device of Fig. 1 of the Miller reference. The claimed relationship of the intake port to the chamber positioning at maximum volume is not suggested nor is the pressure relationship $P_c < P_d$ of the claimed expander. Furthermore, such a revelation is not to be readily arrived at since both references are directed to compressors, not expanders, with the Miller reference only tangentially referring to a motor. The Examiner has read the claims on the King and Miller with regard to the teaching of the references which are directed to compressors. Thus, the rejections are improperly reading the claimed invention into the references which do not teach the claimed structure.

In view of the above, it is respectfully submitted that claims 5 and 7 particularly describe and distinctly claim elements not disclosed in the cited reference. Therefore, reconsideration of the rejections of claims 5 and 7 and their allowance are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claim 6 is rejected as obvious over King in view of Viegas, and claim 8 is rejected as obvious over King in view of Shimizu, each under 35 U.S.C. §103(a). The applicant herein respectfully traverses these rejections. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

It is respectfully submitted that the proffered combination of references cannot render the rejected claims obvious because the secondary Viegas and Shimizu references do not provide the teaching noted above with respect to the anticipation rejection that is absent from the primary reference. Thus, the combination of prior art references fails to teach or suggest all the claim limitations. Therefore, reconsideration of the rejections of claims 6 and 8 and their allowance are respectfully requested.

NEW CLAIMS

Independent claim 15 recites the discharge pressure is greater than the pressure P_c at maximum chamber volume which is further reflected in the

following:

the first discharge port being positioned so that the operating chambers are compressed starting immediately after the operating chambers communicate with the first discharge port and are compressed to provide a pressure a level greater than the discharge pressure (P_d) to open the valve mechanism.

Claim 15 additionally recites:

said intake port being positioned to end communication with said operating chambers when an immediately preceding one of said operating chambers expands to the maximum volume V_c ;

Claim 16 sets forth a relationship of the maximum expansion ratio to the positioning of the intake port which is not taught by the references.

The above features, among other features recited in the claims, are not believed disclosed in the cited art in the manner as claimed. Dependent claims 17-24 are patentable based on the subject matter cited therein in addition to the subject matter of respective base claims.

CLAIM FEES

Four claims in excess of twenty are added. Three further independent claims in excess of three are added. Accordingly, please charge the fee of \$800.00 to Deposit Account No. 10-1250.

REQUEST FOR EXTENSION OF TIME

Applicant respectfully requests a three month extension of time for responding to the Office Action. Please charge the fee of \$1020.00 for the extension of time to Deposit Account No. 10-1250.

If there is any discrepancy between the fee(s) due and the fee payment authorized in the Credit Card Payment Form PTO-2038 or the Form PTO-2038 is missing or fee payment via the Form PTO-2038 cannot be processed, the USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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